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NUTRITION REVIEWS

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FOOD FADDISM

Much progress has been made during the past half century in the understanding of foods and their relation to health. It is appropriate that periodically one should review how this new knowledge is used, or misused. Considering that most people concern themselves with food consumption three or more times daily, there is perhaps no practice or habit which can influence the health of an individual as much as the decisions that are made with regard to bodily nourishment. It is not surprising that daily decision-making on this important aspect of health is greatly conditioned by pseudo-scientific or faddist influences.

An alarming quantity of written information is disseminated extolling the virtues of this or that supplement as representing the road to good health and the average consumer has difficulty in distinguishing between the sane and sensible approach to good nutrition versus the faddist approach. Considering our population as a whole, the older segment is perhaps most vulnerable to the influence of the mythical or faddist approach, since usually the aches and pains of old age are at least implied to be curable by the "special supplement".

Nutritional scientists need to concern themselves with the ever increasing volume of faddist literature, which usually contains some truths but also a great deal of half-truths or mis-truths.

Some glaring mis-truths about nutrition knowledge which have recently been addressed to this office under the guise of scientific literature will serve as examples.

A recent publication mentions in very positive terms that chemical farming leads to disease. White flour is referred to as "no good" because it has been enriched. Vitamin E is dignified with the claim that it is essential for us to have a normal cardiovascular system. The fertile egg is given special recognition as having nutritive value not found in infertile eggs. Milk is credited with having only one vitamin, namely synthetic vitamin D_3. Such mis-truths will continue to be used by the faddist; and of course the average reader is not particularly disturbed by the fact that there is no documentation or reference to scientific studies in support of the claims.

The faddist often uses the argument that modern farming depletes the soil of amino acids and that amino acids are the building blocks used by the plant for making proteins of high quality. It should hardly seem necessary to point out that nitrates are the final oxidation products of soil nitrogen and that microbiological conditions in most cultivated soils favor their rapid formation. Thus, whether the soil is treated with organic forms of nitrogen or not, the predominance of nitrate as the form of nitrogen used by plants is dictated by the soil conditions which favor its formation from organic nitrogen compounds.

The contention that soil depletion causes malnutrition has been aired routinely by faddists. The claim is usually advanced that 95 per cent of our farm land is now depleted of "nature's" plant foods. It is further claimed that plants grown on such soils cannot produce vegetables, eggs, meat, or milk of satisfactory quality to meet our nutritional needs.

Many competent nutritionists have attempted to demonstrate whether or not soils exhausted of their fertility produce crops of a modified nutrient composition. Most characteristically, the only conclusion that can

be drawn from such experiments is that crop yields are drastically reduced when they are grown on soils of low fertility. Therefore, the well recognized practice of fertilizing soils for maximum economical crop production, regardless of whether the fertilizer source is organic or inorganic, continues to be the sane and reasonable agronomic practice.

It is appropriate to recall the very comprehensive investigation conducted by workers at Michigan State University during the decade 1945 to 1955 (*Nutrition of Plants, Animals, Man. Centennial Symposium, Michigan State University, February, 1955*). These workers reasoned that a great proportion of our highly depleted and infertile land is used in growing feed for cattle, whose milk is used mainly as food for man. Hay and pasture grown on soils of low fertility continue to be the main sources of feed for many cattle and it seemed important to determine whether or not soil fertility would influence the quality of cow's milk. After ten years of feeding crops from severely depleted soils to one herd of cows and comparing the results with those obtained in a comparable herd fed crops produced from soils fertilized according to modern agronomic practices, the following conclusions were drawn.

No differences in the health and milk production records were observed among the cattle. None of the minor changes noted in the composition of the milk produced under these widely different feeding practices could be associated with the source of feed. Feed produced on soil of low fertility did not have any detectable deleterious effect on the milk produced.

The results of this extensive study lend confidence to the observation widely experienced by leading cattle nutritionists; namely, that if sufficient feed is available to support lactation, the milk produced will be high in nutritive quality. Based on the experience of the Michigan study, the economic advantages of improvement in crop yields from fertilization of depleted soils are obviously tremendous.

Related to the objective of the Michigan experiment, but slanted toward the faddists' view, is a comment in a recent publication that may be phrased as follows: "Because cereal grains are deficient in lysine and tryptophan, excessive grain feeding has caused widespread deficiencies of these amino acids in our livestock population." This should be of real interest to dairy cattle nutritionists, and one might well ask the faddist responsible for the above view for the scientific evidence that deficiencies of the amino acids can be demonstrated in ruminant species. It is well recognized that ruminants such as cattle and sheep, in contrast to non-ruminants such as swine, poultry, and man, have a notable capacity to convert feed proteins of relative low nutritive quality into proteins of high nutritive quality (such as meat and milk) because of microbiologically-induced fermentation in the rumen. Indeed, this process is so effective that even urea and other simple nitrogen compounds can be converted to protein for milk production.

These are but a few of the half-truths or mis-truths that have come to this office in recent months. The damage caused by such falsification of the knowledge of nutrition lies in its destroying the confidence of the public in what is true about foods and nutrition.

Protection of the public against faddist activities might be attained by more effectively controlling claims through the efforts of the Food and Drug Administration of the Department of Health, Education, and Welfare. It is not likely that the faddists will be legislated out of existence, however.

Dissemination of the truth through more vigorous youth education and extension of adult education programs would appear to constitute the most effective remedy for counteracting the impact of the faddist. Equally important, in the view of R. E.

Olson, is that of improving the standards in the practice of clinical nutrition by physicians (*Nutrition Reviews* **16,** *97 (1958)*). Dr. Olson emphasizes that, unfortunately, many physicians are not fully informed in the field of nutrition and diet therapy, and thus are not prepared to counteract faulty diet practices urged upon the public by the faddist.

In this connection, it is enlightening to note the recent educational advances by the American Medical Association to aid the practicing physician and the public in combating faddism. "Let 'Em Eat Hay", a paper reprinted from *Today's Health*, sets forth procedures used to spot quacks and the common approaches or "pitches" used by the modern medicine man or faddist. "The Medicine Man" is an important documentary film prepared by the American Medical Association with the aid of the Food and Drug Administration and the National Better Business Bureau and is available through local medical societies. It exposes faddist practices and aids the public in identifying food quacks. Public showings of this film by local dietetic, nutrition, and medical organizations, co-sponsored with business associations, could do much to curb the effectiveness of quackery and faddism.

It still remains an important function of the organized nutritionist, however, to be on the alert for publications containing nutritional information of questionable accuracy and to inform their fellow workers.

It is gratifying that some nutritionists are earnestly attempting to counteract the harmful influence of faddist propaganda. The American Institute of Nutrition devoted a symposium to this subject (*Fed. Proc.* **13,** *780 (1954)*). A publication by the American Dietetic Association answers many faddist claims in an effective manner (*Food Facts Talk Back, Am. Dietet. Assoc., 1957*). Recently a joint meeting of the Nutrition Foundation, Inc., New York City, and the Northern California Section of the Institute of Food Technologists devoted a program to the role of nutrition education in combatting food fads. A summary of the joint meeting is available in a booklet published by the Nutrition Foundation, Inc., 1959.

The encouragement of the distribution of reliable food and nutrition information through more and better programs in the field of nutrition education is obviously a worthy endeavor of the food industry. In this connection, the distribution of factual information by the food industry in retail food markets could do much to assist with the education of the consumer. Such programs could effectively supplement the state agricultural extension programs which reach the consumer directly through the county home demonstration agents.

Finally, all nutritionists should be alert to the ever increasing volume of published nutrition information disseminated by the quack or faddist. It is only through an effort on a broad front that falsehoods and misstatements can be effectively combatted.

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